



Dart Aerospace Ltd.
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Canada

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D2580-1**Job Sheet 200541****Part No:** D2580-1**Job Qty:** 8 pcs**Part Name:** 205 Bent Tube**Part Weight:** 0 lbs**Status:** New**Priority:** Medium**Job Created:** 9/12/19**Job Tracking No:****Due Date:** 9/20/19**Created By:** Marie Lajeunesse**Type:** Stock**Description:**

Note: DWG D2580 REV h SHEETS 1,2,3,8 IPP B 01.11.08 Revised Step 9, 10, 12, and 13 SM IPP Rev:C 10.12.01
as per DEO D1 DD ver:ec

Ship Via:**Bill of Materials****Job Routing**

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Skidtubes - 1	8 pcs	9/20/19		0.00	7.41	Skidtubes - 1		DOTF
							Skidtubes - 2		
							Skidtubes - 3		
							Skidtubes - 4		
							Skidtubes - 5		
							Skidtubes - 6		
							Skidtubes - 7		
101	QC 5	8 pcs	9/20/19		0.00	0.00	QC 5 - 10		BLS
							QC 5 - 12		
							QC 5 - 17		
							QC 5 - 18		
							QC 5 - 19		
							QC 5 - 22		
							QC 5 - 24		
							QC 5 - 3		
							QC 5 - 43		
							QC 5 - 49		
							QC 5 - 51		
							QC 5 - 58		
							QC 5 - 68		
							QC 5 - 9		
							QC 5 - 50		
							QC 5 - 30		
							QC 5 - 40		
110	Handfinish - 1-1 Chemical-B4B	8 pcs	9/20/19		0.00	3.33	Handfinish - 1 - 1 - B4B		SEP 18 2019
							Handfinish - 1 - 2 - B4B		
							Handfinish - 1 - 3 - B4B		
							Handfinish - 1 - 4 - B4B		



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Container No: S214193**Part:** D2580-1**Job No:** 200541**Serial No/Batch:** S214193**Revision:** H**Inspector:****Exp Date:****Instructions:** Various STC's**Date:** 09/17/19

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				Handfinish - 1 - 5 - B4B	
				Handfinish - 1 - 6 - B4B	
				Handfinish - 1 - 7 - B4B	
				Handfinish - 1 - 8 - B4B	
				Handfinish - 1 - 9 - B4B	
				Handfinish - 1 - 10 - B4B	
				Handfinish - 1 - 11 - B4B	
				Handfinish - 1 - 12 - B4B	
				Handfinish - 1 - 13 - B4B	
				Handfinish - 1 - 14 - B4B	
				Handfinish - 1 - 15 - B4B	
				Handfinish - 1 - 16 - B4B	
				Handfinish - 1 - 17 - B4B	
				Handfinish - 1 - 18 - B4B	
				Handfinish - 1 - 19 - B4B	
				Handfinish - 1 - 20 - B4B	
				Handfinish - 1 - 21 - B4B	
				Handfinish - 1 - 22 - B4B	
120	QC 7	8	9/20/19	QC 7 - 10	
		pcs		QC 7 - 13	
				QC 7 - 14	
				QC 7 - 15	
				QC 7 - 17	
				QC 7 - 18	
				QC 7 - 19	
				QC 7 - 2	
				QC 7 - 28	
				QC 7 - 3	
				QC 7 - 30	
				QC 7 - 34	
				QC 7 - 36	
				QC 7 - 37	
				QC 7 - 41	
				QC 7 - 47	
				QC 7 - 48	
				QC 7 - 51	
				QC 7 - 58	
				QC 7 - 59	
				QC 7 - 60	
				QC 7 - 9	
				QC 7 - 68	
				QC 7 - 50	
				QC 7 - 67	
				QC 7 - 40	
				QC 7 - 24	
				QC 7 - 43	
				QC 7 - 61	
				QC 7 - 81	

				QC 7 - 76	
125 Skidtubes - 2 - B4B	8 pcs	9/20/19	0.00 7.41	Skidtubes - 1 - B4B	
				Skidtubes - 2 - B4B	
				Skidtubes - 3 - B4B	
				Skidtubes - 4 - B4B	TF
				Skidtubes - 5 - B4B	
				Skidtubes - 6 - B4B	
				Skidtubes - 7 - B4B	
130 QC 5	8 pcs	9/20/19	0.00 0.00	QC 5 - 10	
				QC 5 - 12	
				QC 5 - 17	
				QC 5 - 18	BE
				QC 5 - 19	
				QC 5 - 22	
				QC 5 - 24	
				QC 5 - 3	
				QC 5 - 43	
				QC 5 - 49	
				QC 5 - 51	
				QC 5 - 58	
				QC 5 - 68	
				QC 5 - 9	
				QC 5 - 50	
				QC 5 - 30	
				QC 5 - 40	
				QC 5 - 61	
				QC 5 - 81	
140 Packaging 3-1 - Stock - B4B	8 pcs	9/20/19	0.00 0.00	Packaging 3 - 1 - B4B	
				Packaging 3 - 2 - B4B	
				Packaging 3 - 3 - B4B	
				Packaging 3 - 4 - B4B	
				Packaging 3 - 5 - B4B	
				Packaging 3 - 6 - B4B	
				Packaging 3 - 7 - B4B	
				Packaging 3 - 8 - B4B	
				Packaging 3 - 9 - B4B	
				Packaging 3 - 10 - B4B	
				Packaging 3 - 11 - B4B	
				Packaging 3 - 12 - B4B	
				Packaging 3 - 13 - B4B	
				Packaging 3 - 14 - B4B	
				Packaging 3 - 15 - B4B	
				Packaging 3 - 16 - B4B	
				Packaging 3 - 17 - B4B	
				Packaging 3 - 18 - B4B	
				Packaging 3 - 19 - B4B	
				Packaging 3 - 20 - B4B	
				Packaging 3 - 21 - B4B	
				Packaging 3 - 22 - B4B	
				Packaging 3 - 23 - B4B	
				Packaging 3 - 24 - B4B	
				Packaging 3 - 25 - B4B	
				Packaging 3 - 26 - B4B	MV
				Packaging 3 - 27 - B4B	
				Packaging 3 - 28 - B4B	
				Packaging 3 - 29 - B4B	
				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	

				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	
				Packaging 3 - 35 - B4B	
				Packaging 3 - 36 - B4B	
150 QC 21 - SA	8 pcs	9/20/19	0.00 0.00	QC 21 - SA - 21	DAG
				QC 21 - SA - 70	21
				QC 21 - SA - 53	9-89
Part Op 100 - (Skidtube) 1- Inspect mat'l D2500-1-190 for damage. 2-Drill pilot holes using drill jig DT 8149 A-BC-D 3-Open holes Descriptions: to 0.508" as per Dwg D2580 4-Debur holes per QSI002 section 4.2.3 and blow out all chips from inside of tube 5- Test fit inspection saddles on FWD & AFT saddle holes using DT9916. 101 - (QC5- Inspect part completeness to step on W/O) 110 - (Chemical Conversion Coat per QSI005 4.1) 120 - (QC7-Inspect Chemical Conversion Coat) 125 - (Skidtube) 1- Bond web in place per QSI 015. A/R Sikaflex-291 batch: <u>5200625</u> Sikaflex expire date: <u>07.25.20</u> Start time and date: <u>Oct 01 9:00am</u> bond for 12hrs 130 - (QC5- Inspect part completeness to step on W/O) 140 - (Identify as per dwg & Stock Location: <u>LG002</u>) LOCATION : LG002 150 - (QC21- Final Inspection - Work Order Release)					
Job BOM					
Part / Item	Component Name	Quantity	Operation	Container	
D2500-1-190	Ext'n -"I" Beam Tube 4"	8 pcs (1 ea)	100-Skidtubes - 1	5168371	
D2596	Web, 205 Skidtube	8 pcs (1 ea)	125-Skidtubes - 2 - B4B	5196746 x1	
				5186697 x3	
Job Allocations					
Operation	Component Part	Required	Inventory	Allocated	
100-Skidtubes - 1	D2500-1-190	8	130	0	
125-Skidtubes - 2 - B4B	D2596	8	12	0	
Part Specifications					
Specifications could not be found.					

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ITEM	QTY -041	QTY -045	QTY -047	PART NUMBER	DESCRIPTION
1	X			D2680-041	SHOOTUBE ASSEMBLY
2		X		D2680-045	SHOOTUBE ASSEMBLY
3			X	D2680-047	SHOOTUBE ASSEMBLY
4				D2680-049	SHOOTUBE ASSEMBLY
20	1	1	1	D2680-1180	EXTRUSION
21			18	D2670	BUSHING
22	1	1	1	D2676-3	STEP
23		4		D2679	SPACER
24	16	16	8	D2684-1	PLUG
25	16	16	8	D2684-3	O-RING
26	1	1	1	D2686	205 WEB
27	1	1	1	D2685	AFT CAP
28	1	1	1	D2684-5	WEARSHOE
29	1	1	1	D2684-9	WEARSHOE
30	1	1	1	D2684-11	WEARSHOE
31	1	1	1	D2684-13	WEARSHOE
32	20	20	24	D4602-1	SPACER
33			1	D4605-041	WEARPLATE ASSEMBLY
34			1	D4609-043	WEARPLATE ASSEMBLY
35			1	D0001-1	FIND WEARPLATE
36			1	D0001-3	AFT WEARPLATE
37	50	50		AL57-1032-130 or AK57-1032-130 or AK54-1032-130 or AL53-1032-130	INSERT
38				AK504A	BOLT
39	2	2	2	AK504A	BOLT
40			6	AK4-48A	BOLT
41	60	60		NAB114603032R	WASHER (AMR000101)
42	2	2	2	NAB114603032J	WASHER (AMR000101)
43			6	NAB1043-4	NUT (OR NAB1043L4)

GENERAL NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION PER DART Q81 008 4.1 PRIOR TO INSERTING D2686 WEB
POWDER COAT (041/047/049) GLOBS WHITE (REF 4.3.1.1) PER DART Q81 008 4.3
BLACK ANTI-RUST (046) GREEN SANDTEX (REF 4.3.3.6) PER DART Q81 008 4.4
- 3) TOLERANCES ARE PER DART Q81 016 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D2680-041 = 33.7 lbs
D2680-045 = 33.7 lbs
D2680-047 = 45.1 lbs
D2680-049 = 52.0 lbs
- 8) WELDING PER DART Q81 004.
- 9) INSERT D2686 WEB TO LOCATION SHOWN OFF AFT END OF SHOOTUBE AND BOND WEB INTO
OUTER TUBE WITH NON-STRUCTURAL SKAFLEX-241 ADHESIVE PER DART Q81 016 BEFORE
BENDING. ENSURE HOLES LINE-UP.
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 90 AND
ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 11) ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS
ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 12) USE DART DRILL TEMPLATE DT0217 & DT0607 ONLY FOR D2680-041/045 TO LOCATE AND DRILL
20.297 HOLES FOR WEARSHOE INSERTS. INSTALL AL57-1032-130 PER SECTIONS B,B AND F,F (50
PLACES) AFTER FINISH. INSTALL AN504A BOLTS AND NAB114603032R WASHERS WITH
SKAFLEX-241-291.
- 13) INSERT D2684-1 PLUG ON D2684-3 O-RING IN HOLES MARKED "P" (BOTH SIDES OF TUBE) AFTER
FINISH (6 PLACES FOR D2680-041/045 AND 8 PLACES FOR D2680-047/049)
IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2686 AFT CAP TO PREVENT INTERFERENCE WITH
THE SPACER AT THIS LOCATION

REV.	DESCRIPTION	DATE	BY	DATE
H	SHEET: PL DELETE D2686-11-81-13 GASKETS, WEIGHTS UPDATED ACCORDINGLY, SHEETS 2 & 4 PICTORIAL UPDATE FOR REMOVAL OF GASKETS	94D	94D	17.08.09
G	ADDED -049 -047 WEIGHT UPDATED PER DART Q81 008	AJB	AJB	14.04.09
F	INCORPORATE DED D2680-E-1 PER PART12-216	DC	DC	13.06.20
E	ADD D2680-047 (ZN C4-7) AND D2680-7 (ZN BS-4) INCLUDED DED D2680-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT0217 & DT0607 WAS TD2677-508 (ZN C4-1)	RF	RF	11.09.21
D	CHANGE TO 88 WEARPLATES AND GASKETS, INCLUDE DED 112415163	PH	PH	07.04.08
C	REDRAWN, INCLUDED DED 0004/ 0007	CP	CP	08.08.26
B	AS MANUFACTURED	DS	DS	06.12.02
A	NEW ISSUE	DS	DS	09.02.16
DESIGN	DS	DATE	BY	DATE
DRAWN	DS			
CHECKED	DS			
INFL. APPR.	DS			
APPROVED	DS			
DATE	17.06.09			

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DART AEROSPACE LTD
HAMPSHIRE, ONTARIO, CANADA
DRAWING NO. D2680
REV. H
SHEET 1 OF 9
TITLE 205 SHOOTUBE ASSEMBLY
SCALE NTS
DATE 17.06.09
DART AEROSPACE LTD
HAMPSHIRE, ONTARIO, CANADA



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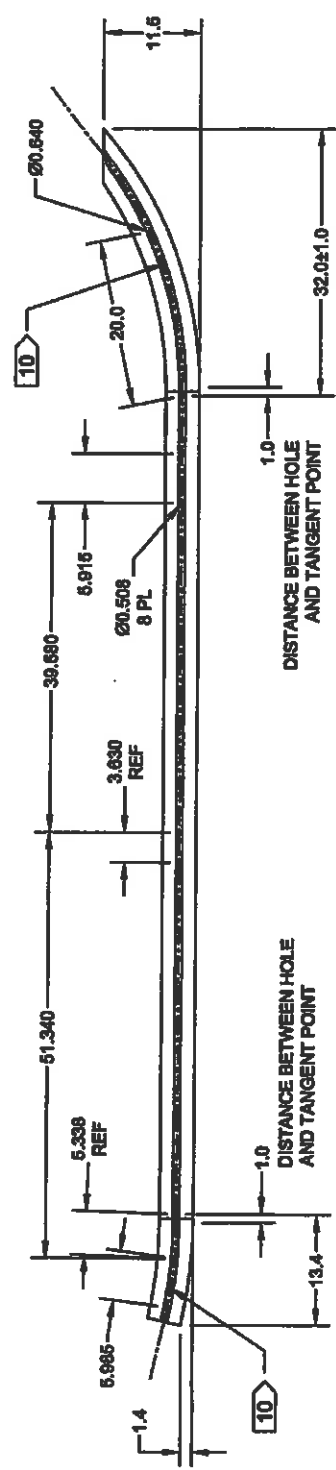
DESIGN	DS	DART AEROSPACE LTD HAWKSBURY, ONTARIO, CANADA	
DRAWN	SAD	DRAWING NO.	REV. H
CHECKED	<i>[Signature]</i>	D2590	SHEET 3 OF 9
MFG. APPR.	<i>[Signature]</i>	TITLE	SCALE
APPROVED	<i>[Signature]</i>	206 SKIDTUBE ASSEMBLY	NTS
DATE	17.06.99	DES APPR.	CONTRACT NO. 99-07 DART AEROSPACE LTD

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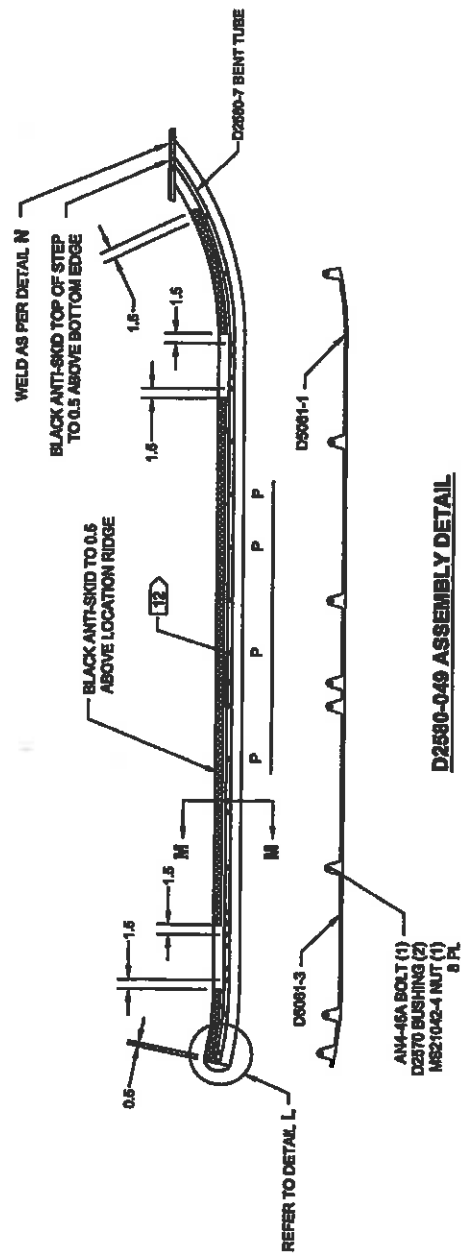
D2580-5 BENT TUBE
(MAKE FROM D2580-101 TUBE)

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2017 JUL 05

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DRAWN	SAD	HAWTHORNSBURGH, ONTARIO, CANADA
CHECKED	<i>[Signature]</i>	DRAWING NO. REV. H
MFG. APPR.	<i>[Signature]</i>	D2580 SHEET 5 OF 9
APPROVED	<i>[Signature]</i>	TITLE SCALE
DE APPR.	<i>[Signature]</i>	205 SKIDTUBE ASSEMBLY NT8
DATE	17.06.09	CONFIDENTIAL DART AEROSPACE LTD THIS DRAWING IS THE PROPERTY OF DART AEROSPACE LTD AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.

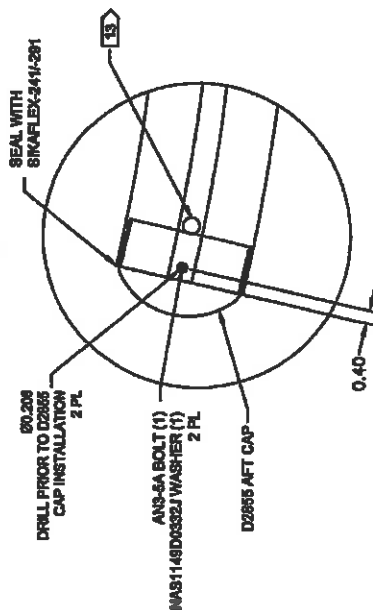
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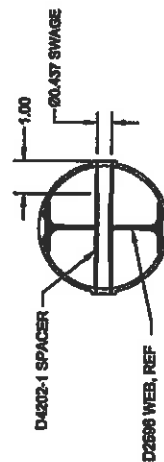


D2580-049 ASSEMBLY DETAIL

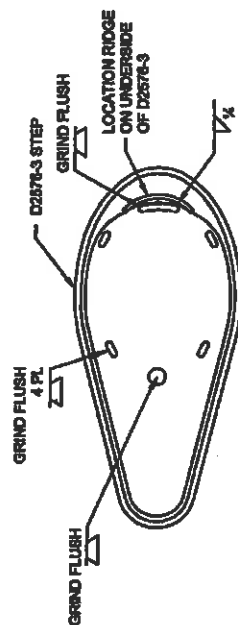
DETAIL L
SCALE 5X



SECTION M-M
SCALE 5X



DETAIL N
SCALE 5X



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR 90.938 HOLES ONLY:
1. INSERT D4202-1 SPACER (2 PLACES)
2. SWAGE TO 90.437 X 1.00 DEEP PER Q81 002
3. TRIM GRIND FLUSH PER Q81 002

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2017 JUL 05 q

DESIGN	DS	DART AEROSPACE LTD
DRAWN	SAD	HARRISBURT, ONTARIO, CANADA
CHECKED	7/5/09	DRAWING NO. D2580
INFL. APPR.		REV. H
APPROVED		SHEET 7 OF 9
DE APPR.		SCALE
DATE	17.06.09	TITLE
		205 SKIDTUBE ASSEMBLY
		NTB

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Entered: _____ Date: _____

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____		DISPOSITION		DEPARTMENT/PROCESS													
Part No. _____		Rework Scrap Use-as-is		Eng. (Non-AW) Prod. Eng. Coord. Rec/Store/Packaging													
Date: _____		Sequence #: _____		QTY Affected: _____													
Description Work Order Deviation		Disposition		MRB (Q51042)													
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Other/Details: _____				Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐				Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐				Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread ☐			
Completed By		Lead hand / Supervisor		QC / QA Coordinator													